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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,577	07/18/2003	Osamu Hoshuyama	Q76590	2125

23373 7590 11/27/2007  
SUGHRUE MION, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
SUITE 800  
WASHINGTON, DC 20037

EXAMINER
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SINGH, RAMNANDAN P

ART UNIT	PAPER NUMBER
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2614

MAIL DATE	DELIVERY MODE
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11/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<div style="border: 1px solid black; width: 150px; height: 20px; margin: 0 auto;"></div> <p style="text-align: center;"><b>Office Action Summary</b></p>	Application No.	Applicant(s)	
	10/621,577	HOSHUYAMA, OSAMU	
	Examiner	Art Unit	
	Ramnandan Singh	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ONE MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 September 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-82 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-82 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                      |                                                                    |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)            |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application  |
| Paper No(s)/Mail Date _____                                                          | 6) <input checked="" type="checkbox"/> Other: <u>Restriction</u> . |

## DETAILED ACTION

### PREFACE

1. This case has been transferred to another examiner.

### *Election/Restrictions*

2. This application contains claims directed to the following patentably distinct inventions:

Group I: Claims 1-21, 67-70, 30-50 and 75-78, drawn to a speech communication apparatus for echo cancellation, classified in class 379, subclass 406.01,

Group II: Claims 20-29, 71-74 and 51-58, drawn to sub-band echo suppressors, classified in class 379, subclass 406.14.

Group III: Claims 59-66 and 79-82, drawn to a spectral shaper for sub-band noise cancellation, classified in class 379, subclass 406.14, 392.01.

3. The inventions are distinct, each from the other because of the following reasons:

Group I, II and Group III are unrelated. They are unrelated if it can be shown that they are not disclosed as capable of use together and they

have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01).

In the instant case Group I is drawn to a speech communication apparatus having an echo canceller; Group II is drawn to sub-band echo suppressors; and Group III is drawn to a spectral shaper for sub-band noise cancellation. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. This application having three distinct inventions defined by Group I, Group II and Group III, contains claims directed to the following patentably distinct species of the claimed inventions:

(A) Species of Group I:

Species I: Claims 3 and 32 are directed to estimating an acoustic echo component from a ratio of the first input signal and the second input signal.

Species II: Claims 2, 4-12, 31, 33-41 are directed to a plurality of subband frequency components of a first input signal and a second input signal.

Species III: Claims 14-21 and 43-50 are directed to a plurality of subband frequency components of a residual echo signal and a distant signal.

Species IV: Claims 13 and 42 are directed to a harmonic generator for emphasizing harmonic components.

Species V: Claims 67-70 and 75-78 are directed to estimating an acoustic echo component by modifying the magnitudes of the first and second input signals.

(B) Species of Group II:

Species VI: Claims 23-29 and 52-58 are directed to a subband spectral shaping comprising a division circuit and a smoother.

Species VII: Claims 71-74 are directed to a subband spectral shaping means for estimating an acoustic echo component by modifying the magnitudes of the first and second input signals.

(C) Species of Group III:

Species VIII: Claims 60-66 are directed to subband spectral shaping means for cancellation of noise.

Species IX: Claims 79-82 are directed to a subband spectral shaping means for estimating subband noise components by modifying the magnitudes of the first and second subband signals.

5. Applicant is required under 35 U.S.C. 121 to elect a single disclosed invention from Groups I, II and III for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, there is no generic claim. Applicant is further required under 35 U.S.C. 121 to elect a single disclosed species from Species I through V of Group I for prosecution on the merits to which the claims shall be restricted if Group I is chosen or to elect a single disclosed species from Species VI through VII of Group II for prosecution on the merits to which the claims shall be restricted if Group II is chosen or to elect a single disclosed species from Species VIII through IX of Group III for prosecution on the merits to which the claims shall be restricted if Group III is chosen.

5. Applicant is advised that a reply to this requirement must include both (i) an identification of a group that is elected, and (ii) an identification of species from that group that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the

evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

6. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

7. A shortened statutory period for response to this office action is set to expire **0 (zero) months and 30 (thirty) days** from the mail date of this letter. Failure to respond within the period for response will result in **ABANDONMENT** of this application (see 35 U.S.C. 133 and MPEP 710.02, 710.02(b)).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (571) 272-7529. The examiner can normally be reached on M-TH (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. The



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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ramnandan Singh  
Primary Examiner  
Art Unit 2614

A handwritten signature in black ink, appearing to read 'R. Singh', is written over a horizontal line.